P67 Pro

UEFI Setup Guide

ASRock®

English

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"Perchlorate Material-special handling may apply, see www.dtsc.ca.gov/hazardouswaste/perchlorate"

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UEFI SETUP UTILITY

1 Introduction

This section explains how to use the UEFI SETUP UTILITY to configure your system. The UEFI chip on the motherboard stores the UEFI SETUP UTILITY. You may run the UEFI SETUP UTILITY when you start up the computer. Please press <F2> or <Del> during the Power-On-Self-Test (POST) to enter the UEFI SETUP UTILITY, otherwise, POST will continue with its test routines.

If you wish to enter the UEFI SETUP UTILITY after POST, restart the system by pressing <Ctl> + <Alt> + <Delete>, or by pressing the reset button on the system chassis. You may also restart by turning the system off and then back on.

Because the UEFI software is constantly being updated, the following UEFI setup screens and descriptions are for reference purpose only, and they may not exactly match what you see on your screen.

1.1 UEFI Menu Bar

The top of the screen has a menu bar with the following selections:

Main	To set up the system time/date information
Advanced	To set up the advanced UEFI features
H/W Monitor	To display current hardware status
Boot	To set up the default system device to locate and load the Operating System
Security	To set up the security features
Exit	To exit the current screen or the UEFI SETUP UTILITY

Use <← > key or < → > key to choose among the selections on the menu bar, and then press <Enter> to get into the sub screen. You can also use the mouse to click your required item.

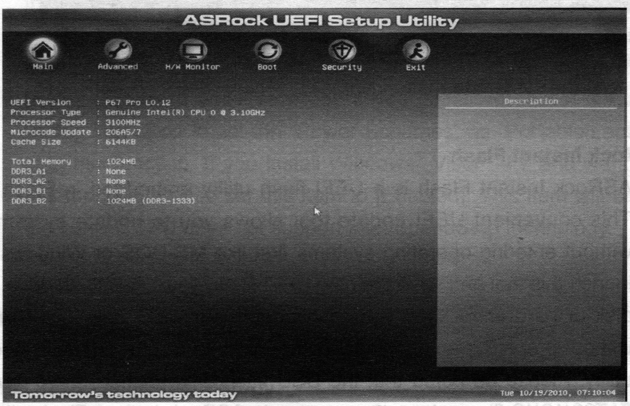
1.2 Navigation Keys

Please check the following table for the function description of each navigation key.

Navigation Key(s)	Function Description
← / →	Moves cursor left or right to select Screens
↑ / ↓	Moves cursor up or down to select items
+ / -	To change option for the selected items
<Enter>	To bring up the selected screen
<F1>	To display the General Help Screen
<F9>	To load optimal default values for all the settings
<F10>	To save changes and exit the UEFI SETUP UTILITY
<ESC>	To jump to the Exit Screen or exit the current screen

2 Main Screen

When you enter the UEFI SETUP UTILITY, the Main screen will appear and display the system overview.



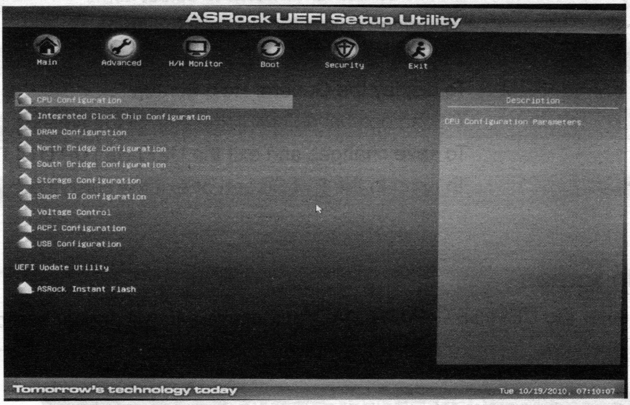
```
UEFI Version      : P67 Pro L0.12
Processor Type    : Genuine Intel(R) CPU 0 @ 3.10GHz
Processor Speed   : 3100MHz
Microcode Update  : 206A5/7
Cache Size        : 6144KB

Total Memory      : 1024MB
DDR3_A1           : None
DDR3_A2           : None
DDR3_B1           : None
DDR3_B2           : 1024MB (DDR3-1333)
```

```
Tue 10/19/2010, 07:10:04
```

3 Advanced Screen

In this section, you may set the configurations for the following items: CPU Configuration, Integrated Clock Chip Configuration, DRAM Configuration, North Bridge Configuration, South Bridge Configuration, Storage Configuration, Super IO Configuration, Voltage Configuration, ACPI Configuration and USB Configuration.

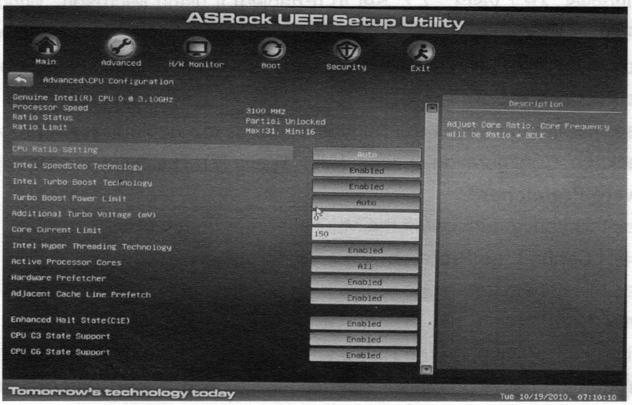


Setting wrong values in this section may cause the system to malfunction.

ASRock Instant Flash

ASRock Instant Flash is a UEFI flash utility embedded in Flash ROM. This convenient UEFI update tool allows you to update system UEFI without entering operating systems first like MS-DOS or Windows®. Just launch this tool and save the new UEFI file to your USB flash drive, floppy disk or hard drive, then you can update your UEFI only in a few clicks without preparing an additional floppy diskette or other complicated flash utility. Please be noted that the USB flash drive or hard drive must use FAT32/16/12 file system. If you execute ASRock Instant Flash utility, the utility will show the UEFI files and their respective information. Select the proper UEFI file to update your UEFI, and reboot your system after UEFI update process completes.

3.1 CPU Configuration


ASRock UEFI Setup Utility
Main
Advanced
H/W Monitor
Boot
Security
Exit
Advanced\CPU Configuration
Description
Tomorrow's technology today

Genuine Intel(R) CPU 0 @ 3.10GHz

Processor Speed	3100 MHz
Ratio Status	Partial Unlocked
Ratio Limit	Max:31, Min:16
CPU Ratio Setting	Auto
Intel SpeedStep Technology	Enabled
Intel Turbo Boost Technology	Enabled
Turbo Boost Power Limit	Auto
Additional Turbo Voltage (mV)	0
Core Current Limit	150
Intel Hyper Threading Technology	Enabled
Active Processor Cores	All
Hardware Prefetcher	Enabled
Adjacent Cache Line Prefetch	Enabled
Enhanced Halt State(C1E)	Enabled
CPU C3 State Support	Enabled
CPU C6 State Support	Enabled

Adjust Core Ratio. Core Frequency will be Ratio * BCLK .

Tue 10/19/2010, 07:10:10

CPU Ratio Setting

Use this item to change the ratio value of this motherboard.

Intel SpeedStep Technology

Intel SpeedStep technology is Intel's new power saving technology. Processor can switch between multiple frequency and voltage points to enable power savings. The default value is [Enabled]. Configuration options: [Auto], [Enabled] and [Disabled]. If you install Windows® XP and select [Auto], you need to set the "Power Schemes" as "Portable/Laptop" to enable this function. If you install Windows® Vista™ / 7 and want to enable this function, please set this item to [Enabled]. This item will be hidden if the current CPU does not support Intel SpeedStep technology.

Please note that enabling this function may reduce CPU voltage and lead to system stability or compatibility issue with some power supplies. Please set this item to [Disable] if above issue occurs.

Intel TurboMode Technology

Use this item to enable or disable Intel Turbo Mode Technology. Turbo mode allows processor cores to run faster than marked frequency in specific condition. The default value is [Enabled].

Turbo Power Limit

Use this item to adjust Turbo power limit. Configuration options: [Auto] and [Manual]. The default value is [Auto].

Turbo Mode Extra Voltage (mV)

Use this item to add voltage when CPU is in Turbo mode.

Intel Hyper Threading Technology

To enable this feature, it requires a computer system with an Intel processor that supports Hyper-Threading technology and an operating system that includes optimization for this technology, such as Microsoft® Windows® XP / Vista™ / 7. Set to [Enabled] if using Microsoft® Windows® XP, Vista™, 7, or Linux kernel version 2.4.18 or higher. This option will be hidden if the installed CPU does not support Hyper-Threading technology.

Active Processor Cores

Use this item to select the number of cores to enable in each processor package. Configuration options: [All], [1] and [2]. The default value is [All].

Hardware Prefetcher

Use this item to turn on/off the MLC streamer prefetcher.

Adjacent Cache Line Prefetch

Use this item to turn on/off prefetching of adjacent cache lines.

Enhance Halt State (C1E)

All processors support the Halt State (C1). The C1 state is supported through the native processor instructions HLT and MWAIT and requires no hardware support from the chipset. In the C1 power state, the processor maintains the context of the system caches.

CPU C3 Report

Use this to enable or disable CPU C3 (ACPI C2) report to OS.

CPU C6 Report

Use this to enable or disable CPU C6 (ACPI C3) report to OS.

Package C State Limit

Selected option will program into C State package limit register. The default value is [No Limit].

CPU Thermal Throttling

You may select [Enabled] to enable CPU internal thermal control mechanism to keep the CPU from overheated.

Intel Virtualization Technology

When this option is set to [Enabled], a VMM (Virtual Machine Architecture) can utilize the additional hardware capabilities provided by Vanderpool Technology. This option will be hidden if the installed CPU does not support Intel Virtualization Technology.

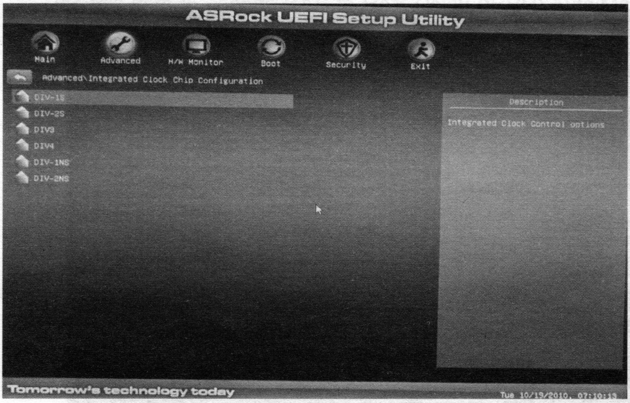
No-Excute Memory Protection

No-Execution (NX) Memory Protection Technology is an enhancement to the IA-32 Intel Architecture. An IA-32 processor with "No Execute (NX) Memory Protection" can prevent data pages from being used by malicious software to execute code. This option will be hidden if the current CPU does not support No-Excute Memory Protection.

Local x2APIC

Use this to enable or disable Local x2APIC. The default value is [Disabled]. Please be noted that some OS do not support this function.

3.2 Integrated Clock Chip Configuration



Integrated Clock Control options

DIV-1S

Integrated Clock Control options.

DIV-2S

Integrated Clock Control options.

DIV3

Integrated Clock Control options.

DIV4

Integrated Clock Control options.

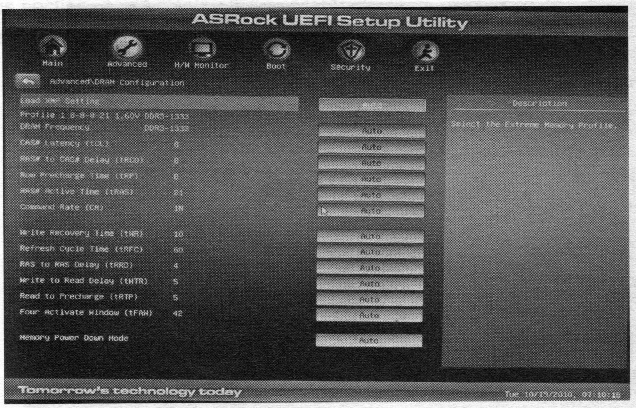
DIV-1NS

Integrated Clock Control options.

DIV-2NS

Integrated Clock Control options.

3.3 DRAM Configuration



```
Advanced\DRAM Configuration

Load XMP Setting                                    Auto
Profile 1 8-8-8-21 1.60V DDR3-1333
DRAM Frequency              DDR3-1333               Auto
CAS# Latency (tCL)             8                    Auto
RAS# to CAS# Delay (tRCD)      8                    Auto
Row Precharge Time (tRP)       8                    Auto
RAS# Active Time (tRAS)        21                   Auto
Command Rate (CR)              1N                   Auto

Write Recovery Time (tWR)      10                   Auto
Refresh Cycle Time (tRFC)      60                   Auto
RAS to RAS Delay (tRRD)        4                    Auto
Write to Read Delay (tWTR)     5                    Auto
Read to Precharge (tRTP)       5                    Auto
Four Activate Window (tFAW)    42                   Auto

Memory Power Down Mode                              Auto

Select the Extreme Memory Profile.

Tue 10/19/2010, 07:10:18
```

Load XMP Setting

Use this to load XMP setting. Configuration options: [Auto], [Profile 1] and [Profile 2]. The default value is [Auto].

DRAM Frequency

If [Auto] is selected, the motherboard will detect the memory module(s) inserted and assigns appropriate frequency automatically.

CAS# Latency (tCL)

Use this item to change CAS# Latency (tCL) Auto/Manual setting. The default is [Auto].

RAS# to CAS# Delay (tRCD)

Use this item to change RAS# to CAS# Delay (tRCD) Auto/Manual setting. The default is [Auto].

Row Precharge Time (tRP)

Use this item to change Row Precharge Time (tRP) Auto/Manual setting. The default is [Auto].

RAS# Active Time (tRAS)

Use this item to change RAS# Active Time (tRAS) Auto/Manual setting. The default is [Auto].

Command Rate (CR)

Use this item to change Command Rate (CR) Auto/Manual setting. Min: 1N. Max: 2N. The default is [Auto].

Write Recovery Time (tWR)

Use this item to change Write Recovery Time (tWR) Auto/Manual setting. The default is [Auto].

Refresh Cyle Time (tRFC)

Use this item to change Refresh Cyle Time (tRFC) Auto/Manual setting. The default is [Auto].

RAS to RAS Delay (tRRD)

Use this item to change RAS to RAS Delay (tRRD) Auto/Manual setting. The default is [Auto].

Write to Read Delay (tWTR)

Use this item to change Write to Read Delay (tWTR) Auto/Manual setting. The default is [Auto].

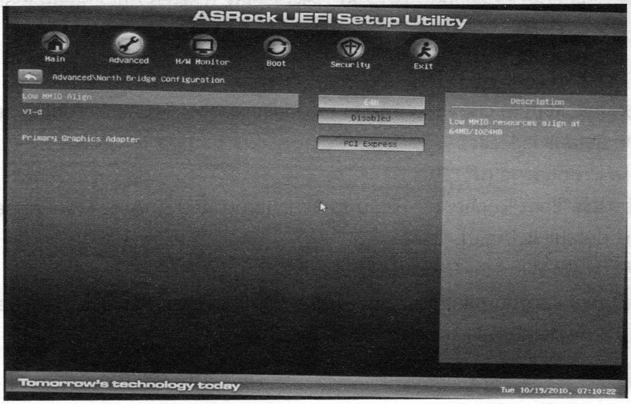
Read to Precharge (tRTP)

Use this item to change Read to Precharge (tRTP) Auto/Manual setting. The default is [Auto].

Four Activate Window (tFAW)

Use this item to change Four Activate Window (tFAW) Auto/Manual setting. The default is [Auto].

3.4 North Bridge Configuration



Advanced\North Bridge Configuration

Low MMIO Align: 64M

VT-d: Disabled

Primary Graphics Adapter: PCI Express

Low MMIO resources align at 64MB/1024MB

Low MMIO Align

Low MMIO resources align at 64MB/1024MB. The default value is [64MB].

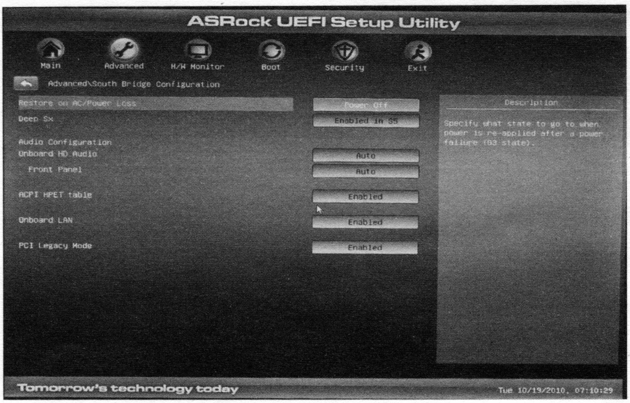
VT-d

Use this to enable or disable Intel® VT-d technology (Intel® Virtualization Technology for Directed I/O). The default value of this feature is [Disabled].

Primary Graphics Adapter

This allows you to select [PCI] or [PCI Express] as the boot graphic adapter priority. The default value is [PCI].

3.5 South Bridge Configuration



Advanced\South Bridge Configuration

Restore on AC/Power Loss: Power Off

Deep Sx: Enabled in S5

Audio Configuration

Onboard HD Audio: Auto

Front Panel: Auto

ACPI HPET table: Enabled

Onboard LAN: Enabled

PCI Legacy Mode: Enabled

Specify what state to go to when power is re-applied after a power failure (G3 state).

South Bridge Configuration

Restore on AC/Power Loss

This allows you to set the power state after an unexpected AC/power loss. If [Power Off] is selected, the AC/power remains off when the power recovers. If [Power On] is selected, the AC/power resumes and the system starts to boot up when the power recovers.

Deep Sx

Mobile platforms support Deep S4/S5 in DC only and desktop platforms support Deep S4/S5 in AC only. Configuration options: [Disabled], [Enabled in S5] and [S4 and S5]. The default value is [Disabled].

Audio Configuration

Onboard HD Audio

Select [Auto], [Enabled] or [Disabled] for the onboard HD Audio feature. If you select [Auto], the onboard HD Audio will be disabled when PCI Sound Card is plugged.

Front Panel

Select [Auto] or [Disabled] for the onboard HD Audio Front Panel.

ACPI HPET Table

Use this item to enable or disable ACPI HPET Table. The default value is [Enabled]. Please set this option to [Enabled] if you plan to use this motherboard to submit Windows® Vista™ certification.

Onboard LAN

This allows you to enable or disable the "Onboard LAN" feature.

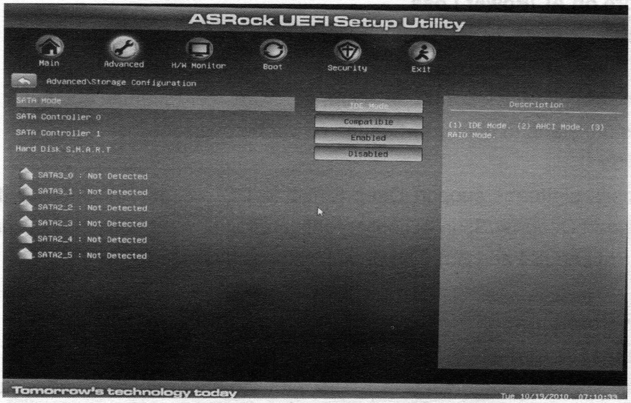
PCI Legacy Mode

This allows you to enable or disable PCI legacy mode. The default value is [Enabled].

Voltage Droop Adjust

This allows you to adjust voltage droop. The default value is [Disabled].

3.6 Storage Configuration


ASRock UEFI Setup Utility
Main
Advanced
H/W Monitor
Boot
Security
Exit
Advanced\Storage Configuration
Description
Tomorrow's technology today

SATA Mode: IDE Mode
SATA Controller 0: Compatible
SATA Controller 1: Enabled
Hard Disk S.M.A.R.T: Disabled

SATA3_0 : Not Detected
SATA3_1 : Not Detected
SATA2_2 : Not Detected
SATA2_3 : Not Detected
SATA2_4 : Not Detected
SATA2_5 : Not Detected

(1) IDE Mode. (2) AHCI Mode. (3) RAID Mode.

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SATA Mode

Use this to select SATA mode. Configuration options: [IDE Mode], [AHCI Mode] and [RAID Mode]. The default value is [IDE Mode].

AHCI (Advanced Host Controller Interface) supports NCQ and other new features that will improve SATA disk performance but IDE mode does not have these advantages.

SATA Controller 0

Please select [**Compatible**] when you install legacy OS. If native OS (Windows® XP / Vista™ / 7) is installed, please select [**Enhanced**].

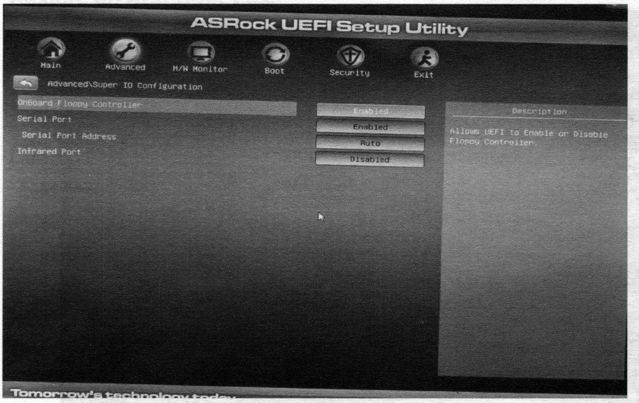
SATA Controller 1

Please select [**Compatible**] when you install legacy OS. If native OS (Windows® XP / Vista™ / 7) is installed, please select [**Enhanced**].

Hard Disk S.M.A.R.T.

Use this item to enable or disable the S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology) feature. Configuration options: [Disabled], [Auto], [Enabled].

3.7 Super IO Configuration


ASRock UEFI Setup Utility
Main
Advanced
H/W Monitor
Boot
Security
Exit
Advanced\Super IO Configuration
Description
Tomorrow's technology today

OnBoard Floppy Controller: Enabled
Serial Port: Enabled
Serial Port Address: Auto
Infrared Port: Disabled

Allows UEFI to Enable or Disable Floppy Controller.

OnBoard Floppy Controller

Use this item to enable or disable floppy drive controller.

Serial Port

Use this item to enable or disable the onboard serial port.

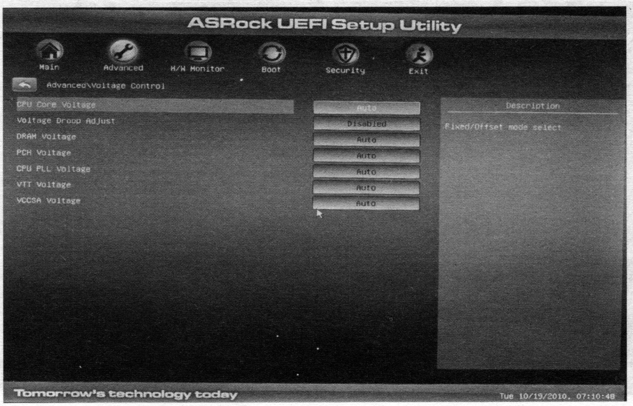
Serial Port Address

Use this item to set the address for the onboard serial port or disable it. Configuration options: [Disabled], [3F8 / IRQ4], [2F8 / IRQ3], [3E8 / IRQ4], [2E8 / IRQ3].

Infrared Port

Use this item to enable or disable the onboard infrared port.

3.8 Voltage Configuration



CPU Core Voltage Auto
Voltage Droop Adjust Disabled
DRAM Voltage Auto
PCH Voltage Auto
CPU PLL Voltage Auto
VTT Voltage Auto
VCCSA Voltage Auto

Fixed/Offset mode select

CPU Core Voltage Offset

Use this to select CPU Core Voltage Offset. Configuration options: [Auto], [+0.005V] to [+0.300V]. The default value is [Auto].

DRAM Voltage

Use this to select DRAM Voltage. Configuration options: [Auto], [1.200V] to [2.040V]. The default value is [Auto].

PCH Voltage

Use this to select PCH Voltage. Configuration options: [Auto], [0.780V] to [1.646V]. The default value is [Auto].

CPU PLL Voltage

Use this to select CPU PLL Voltage. Configuration options: [Auto], [1.586V] to [2.349V]. The default value is [Auto].

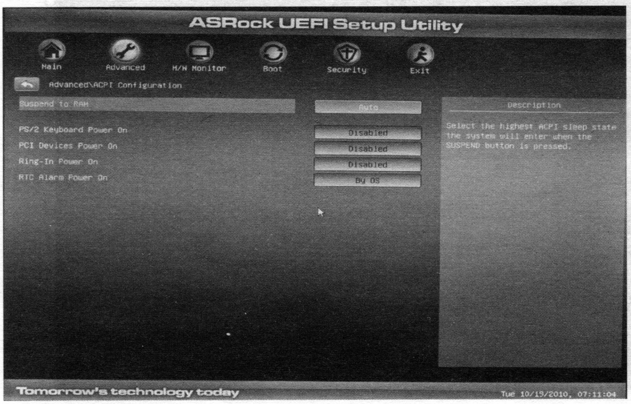
VTT Voltage

Use this to select VTT Voltage. Configuration options: [Auto], [0.726V] to [1.870V]. The default value is [Auto].

VCCSA Voltage

Use this to select VCCSA Voltage. Configuration options: [Auto], [0.925V] to [1.200V]. The default value is [Auto].

3.9 ACPI Configuration


ASRock UEFI Setup Utility
Main
Advanced
H/W Monitor
Boot
Security
Exit
Advanced\ACPI Configuration
Description
Tomorrow's technology today
Tue 10/19/2010, 07:11:04

Suspend to RAM: Auto

PS/2 Keyboard Power On: Disabled

PCI Devices Power On: Disabled

Ring-In Power On: Disabled

RTC Alarm Power On: By OS

Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.

Suspend to RAM

Use this item to select whether to auto-detect or disable the Suspend-to-RAM feature. Select [Auto] will enable this feature if the OS supports it.

PS/2 Keyboard Power On

Use this item to enable or disable PS/2 keyboard to turn on the system from the power-soft-off mode.

PCI Devices Power On

Use this item to enable or disable PCI devices to turn on the system from the power-soft-off mode.

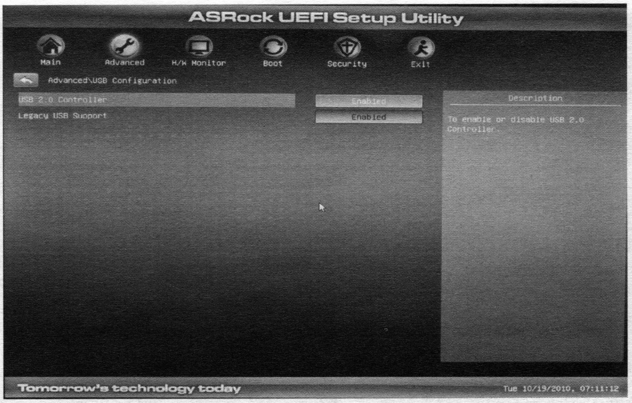
Ring-In Power On

Use this item to enable or disable Ring-In signals to turn on the system from the power-soft-off mode.

RTC Alarm Power On

Use this item to enable or disable RTC (Real Time Clock) to power on the system.

3.10 USB Configuration


ASRock UEFI Setup Utility
Main
Advanced
H/W Monitor
Boot
Security
Exit
Advanced\USB Configuration
Description
Tomorrow's technology today
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USB 2.0 Controller Enabled
Legacy USB Support Enabled

To enable or disable USB 2.0 Controller.

USB 2.0 Controller

Use this item to enable or disable the use of USB 2.0 controller.

Legacy USB Support

Use this option to select legacy support for USB devices. There are four configuration options: [Enabled], [Auto], [Disabled] and [UEFI Setup Only]. The default value is [Enabled]. Please refer to below descriptions for the details of these four options:

[Enabled] - Enables support for legacy USB.

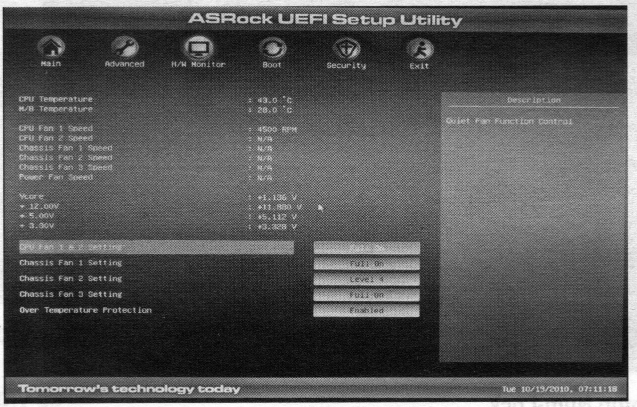
[Auto] - Enables legacy support if USB devices are connected.

[Disabled] - USB devices are not allowed to use under legacy OS and UEFI setup when [Disabled] is selected. If you have USB compatibility issue, it is recommended to select [Disabled] to enter OS.

[UEFI Setup Only] - USB devices are allowed to use only under UEFI setup and Windows / Linux OS.

4 Hardware Health Event Monitoring Screen

In this section, it allows you to monitor the status of the hardware on your system, including the parameters of the CPU temperature, motherboard temperature, CPU fan speed, chassis fan speed, and the critical voltage.


ASRock UEFI Setup Utility
Main
Advanced
H/W Monitor
Boot
Security
Exit
Description
Quiet Fan Function Control
Tomorrow's technology today
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```
CPU Temperature                 : 43.0 °C
M/B Temperature                 : 28.0 °C

CPU Fan 1 Speed                 : 4500 RPM
CPU Fan 2 Speed                 : N/A
Chassis Fan 1 Speed             : N/A
Chassis Fan 2 Speed             : N/A
Chassis Fan 3 Speed             : N/A
Power Fan Speed                 : N/A

Vcore                           : +1.136 V
+ 12.00V                        : +11.880 V
+ 5.00V                         : +5.112 V
+ 3.30V                         : +3.328 V

CPU Fan 1 & 2 Setting           Full On
Chassis Fan 1 Setting           Full On
Chassis Fan 2 Setting           Level 4
Chassis Fan 3 Setting           Full On
Over Temperature Protection     Enabled
```

CPU Fan 1 & 2 Setting

This allows you to set the CPU fan 1 & 2 speed. Configuration options: [Full On] and [Automatic Mode]. The default is value [Full On].

Chassis Fan 1 Setting

This allows you to set the chassis fan 1 speed. Configuration options: [Full On], [Automatic Mode] and [Manual Mode]. The default is value [Full On].

Chassis Fan 2 Setting

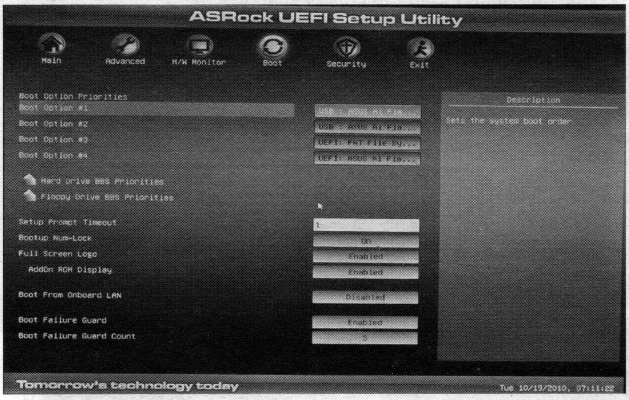
This allows you to set the chassis fan 2 speed. Configuration options: [Level 1] to [Level 4]. The default is value [Level 4].

Chassis Fan 3 Setting

This allows you to set the chassis fan 3 speed. Configuration options: [Full On] and [Manual Mode]. The default is value [Full On].

5 Boot Screen

In this section, it will display the available devices on your system for you to configure the boot settings and the boot priority.



Boot Option Priorities
Boot Option #1 USB : ASUS AI Fla...
Boot Option #2 USB : ASUS AI Fla...
Boot Option #3 UEFI: FAT File Sy...
Boot Option #4 UEFI: ASUS AI Fla...

Hard Drive BBS Priorities
Floppy Drive BBS Priorities

Setup Prompt Timeout 1
Bootup Num-Lock On
Full Screen Logo Enabled
AddOn ROM Display Enabled

Boot From Onboard LAN Disabled

Boot Failure Guard Enabled
Boot Failure Guard Count 3

Sets the system boot order

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Bootup Num-Lock

If this item is set to [On], it will automatically activate the Numeric Lock function after boot-up.

Full Screen Logo

Use this item to enable or disable OEM Logo. The default value is [Enabled].

AddOn ROM Display

Use this option to adjust AddOn ROM Display. If you enable the option "Full Screen Logo" but you want to see the AddOn ROM information when the system boots, please select [Enabled]. Configuration options: [Enabled] and [Disabled]. The default value is [Enabled].

Boot From Onboard LAN

Use this item to enable or disable the Boot From Onboard LAN feature.

Boot Failure Guard

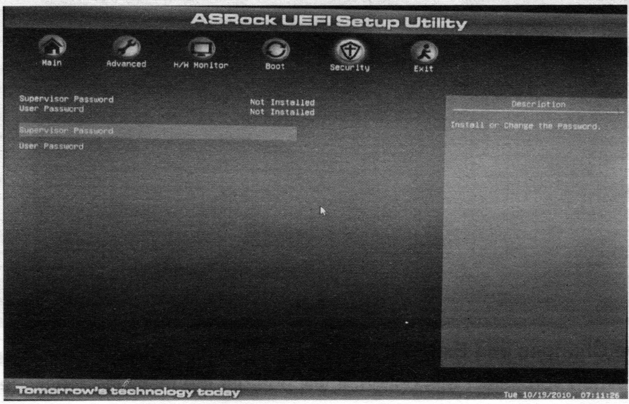
Enable or disable the feature of Boot Failure Guard.

Boot Failure Guard Count

Enable or disable the feature of Boot Failure Guard Count.

6 Security Screen

In this section, you may set or change the supervisor/user password for the system. For the user password, you may also clear it.



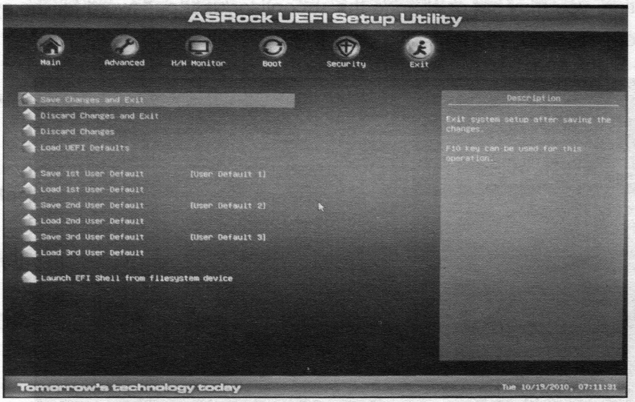
Supervisor Password Not Installed
User Password Not Installed

Supervisor Password
User Password

Install or Change the Password.

Tue 10/19/2010, 07:11:26

7 Exit Screen



Save Changes and Exit
Discard Changes and Exit
Discard Changes
Load UEFI Defaults

Save 1st User Default [User Default 1]
Load 1st User Default
Save 2nd User Default [User Default 2]
Load 2nd User Default
Save 3rd User Default [User Default 3]
Load 3rd User Default

Launch EFI Shell from filesystem device

Description

Exit system setup after saving the changes.

F10 key can be used for this operation.

Save Changes and Exit

When you select this option, it will pop-out the following message, "Save configuration changes and exit setup?" Select [OK] to save the changes and exit the UEFI SETUP UTILITY.

Discard Changes and Exit

When you select this option, it will pop-out the following message, "Discard changes and exit setup?" Select [OK] to exit the UEFI SETUP UTILITY without saving any changes.

Discard Changes

When you select this option, it will pop-out the following message, "Discard changes?" Select [OK] to discard all changes.

Load UEFI Defaults

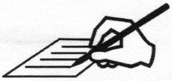
Load UEFI default values for all the setup questions. F9 key can be used for this operation.

User Default

In this option, you are allowed to load and save three user defaults according to your own requirements.

Launch EFI Shell from filesystem device

Attempts to Launch EFI Shell application (Shell64.efi) from one of the available filesystem devices.



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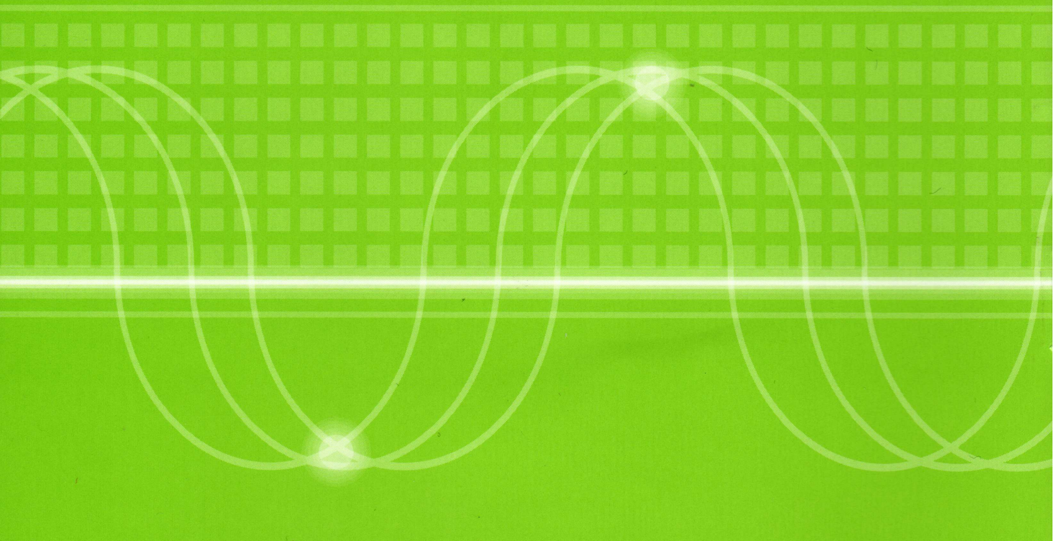

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